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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,555	12/20/2003	Ulf Skarby	P18706-US1	5070

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04/05/2006

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EXAMINER

NGUYEN, DUC M

ART UNIT

PAPER NUMBER

2618

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/743,555	Applicant(s) SKARBY ET AL.	
	Examiner Duc M. Nguyen	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,10,11,14,15,20,21,24,25,30,31,33 and 36 is/are rejected.
- 7) ☒ Claim(s) 2,3,6-9,12,13,16-19,22,23 and 26-29, 32, 34, 35 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The references listed in the information disclosure statements submitted on 12/20/03 and 3/11/05 has been considered by the examiner (see attached PTO-1449).

### ***Specification***

2. It is noted that the “diplexer” and the “duplexer” both have the same meaning “two” for the prefixes. Therefore, there is no distinction between the “diplexer filter” and the “duplexer filter”. Accordingly, the prosecution of this application would be based on claimed elements of the filters as recited in the claims, not on their terminology.

### ***Claim Objections***

3. Claims 6, 8, are objected to because of the following informalities: “an antenna” limitation should be deleted because it duplicates the limitation already recited in the independent claim 1. Appropriate correction is required.
4. Claim 26 is objected to because of the following informalities: “an antenna” limitation should be deleted because it duplicates the limitation already recited in the independent claim 21. Appropriate correction is required.
5. Claims 21-29 are objected to for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 21, a pre-amble should be included in the claim for distinctly pointing out the subject matter. An example of a pre-amble is shown below,

" An apparatus for sharing antenna(s) between a plurality of base stations,  
comprising: ..... claimed limitations.....".

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –  
(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

7. Claims **1, 11, 21, 31** are rejected under 35 U.S.C. 102(a) as being anticipated by **Ke et al** (US Pat. Number **6,658,263**).

Regarding claim **1**, **Ke** discloses a transceiver system comprising:

- an antenna 180 (see Figs. 1-2);
- a filter unit 150 (see Figs. 1-2) ; and
- a plurality of radio base stations each of which have a duplex filter (116, 136) incorporated therein all of which are coupled to said filter unit 150 which in turn is coupled to said antenna (see Figs. 1-2), wherein said radio base stations share said antenna even if said radio base stations share a frequency band and even if said radio base stations operate with different radio standards (see col. 3, lines 5-15 regarding CDMA and GSM standards).

Regarding claims **11, 21, 31**, the claims are rejected for the same reason as set forth in claim 1 above.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims **10, 14-15, 20, 24-25, 30, 33, 36** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Ke**.

Regarding claims **10, 20, 30, 36**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, it is clear that the system as taught by **Ke** would work equally well for all the standards as recited in the claims (see **Ke**, col. 3, lines 5-32).

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, **Ke** discloses two combiner filters for the shared filter (see Fig. 2), wherein each filter can be a bandpass or band reject filter for filtering out signals outside frequency band of its respective base station (see col. 2, lines 33-47). Here, although **Ke** fails to teach each of the combiner filter comprises a transmit filter and a receive filter for its respective base station, one skilled in the art would recognize the benefits of replacing the bandpass filter that is used for both transmit band and receive band with a transmit filter and a receive filter (similar to the duplex filter as shown in Fig. 3A of **Ke**). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Ke** to replace the bandpass filter with a transmit filter and

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a receive filter according to the transmit band and receive band (part bands) of each respective base station, for further reducing interferences between transmit signal and receive signal. By doing so, each transmit filter would read on "a part-band TX filter", and each receiver would read on "a part-band RX filter". Therefore, **Ke** as modified would disclose

- said first radio base station 110 having a duplex filter 116 incorporated therein that is coupled to the first part-band RX filter and the first part-band TX filter (combiner filter 154 as modified) in said part-band duplex filter 150 (see Fig. 2).

- said second radio base station 130 having a duplex filter 136 incorporated therein that is coupled to the second part-band RX filter and the second part-band TX filter (combiner filter 152 as modified) in said part-band duplex filter 150 (see Fig. 2).

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim 4 above. In addition, it would have been obvious to modify **Ke** to further incorporate a third base station and a third part-band RX filter and a third part-band TX filter to the system as claimed, and the system would work equally well.

Regarding claim **14, 24, 33**, the claims are rejected for the same reason as set forth in claim 4 above.

Regarding claim **15, 25**, the claims are rejected for the same reason as set forth in claim 5 above.

***Allowable Subject Matter***

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10. Claims 2-3, 7, 9, 12-13, 16-19, 32, 34-35 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 6, 8, 22-23, 26-29 would be allowable if rewritten to overcome the objection(s) set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

As to claims 2, 12, 22, 32, the cited prior art fails to disclose or make it obvious an apparatus or method for base stations sharing an antenna that comprises filters as specified in the claims (i.e, Fig. 3B).

As to claims 6, 16, 26, 34, the cited prior art fails to disclose or make it obvious an apparatus or method for base stations sharing an antenna that comprises filters as specified in the claims (i.e, Fig. 5A).

As to claims 8, 18, 28, 35, the cited prior art fails to disclose or make it obvious an apparatus or method for base stations sharing an antenna that comprises filters as specified in the claims (i.e, Fig. 6A).

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US006895247B2 to Mostafa,

US006070090A to Feuerstein,

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US006792289B1 to Judson,  
US006925312B2 to Skarby,  
US006804540B1 to Shepherd et al,  
US 20030068998A1 to Yamakawa et al.

14. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window,  
Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner  
should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893,  
Monday-Thursday (9:00 AM - 5:00 PM).

Or to Matthew Anderson (Supervisor) whose telephone number is (571) 272-  
4177.

Duc M. Nguyen, P.E.

Mar 31, 2006

